

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Rysavy MA, Li L, Bell EF, et al. Between-hospital variation in treatment and outcomes in extremely preterm infants. *N Engl J Med* 2015;372:1801-11. DOI: 10.1056/NEJMoa1410689

Supplementary Appendix

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Table of Contents

Section	Page
Investigators and Participating Hospitals	2
Table S1. Modes of Neonatal Active Treatment by Gestational Age	6
Table S2. In-hospital and Follow-up Outcomes by Gestational Age	7
Figure S1. Rates of Neonatal Active Treatment for Infants Born at 22 to 26 Weeks' Gestation in 24 Hospitals in the NICHD Neonatal Research Network	10

Investigators and Participating Hospitals

Data collected at participating sites of the NICHD Neonatal Research Network (NRN) were transmitted to RTI International, the data coordinating center (DCC) for the network, which stored, managed and analyzed the data for this study. On behalf of the NRN, Dr. Abhik Das (DCC Principal Investigator) and Dr. Lei Li (DCC Statistician) had full access to all the data in the study and take responsibility for the integrity of the data and accuracy of the data analysis.

We are indebted to our medical and nursing colleagues and the infants and their parents who agreed to take part in this study.

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Riley Hospital for Children, Indianapolis, IN
University Hospital, Indianapolis, IN
Wishard Hospital, Indianapolis, IN
Floating Hospital for Children at Tufts-New England Medical Center, Boston, MA
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Duke Hospital, Durham, NC
University of New Mexico Health Science Center, Albuquerque, NM
Good Samaritan Hospital, Cincinnati, OH
Rainbow Babies and Children's Hospital, Cleveland, OH
University Hospital, Cincinnati, OH
Women and Infants Hospital of Rhode Island, Providence, RI
Memorial Hermann Children's Hospital, Houston, TX
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Table S1. Modes of Neonatal Active Treatment by Gestational Age

	22 Weeks n (%)	23 Weeks n (%)	24 Weeks n (%)	25 Weeks n (%)	26 Weeks n (%)
<i>Active Intervention</i>	<i>N=79</i>	<i>N=542</i>	<i>N=1119</i>	<i>N=1257</i>	<i>N=1330</i>
Intubation	62 (78.5)	503 (92.8)	1006 (89.9)	1011 (80.4)	977 (73.5)
Surfactant	56 (70.9)	474 (87.5)	1037 (92.7)	1124 (89.4)	1126 (84.7)
Chest compressions	11 (13.9)	80 (14.8)	148 (13.2)	142 (11.3)	106 (8.0)
Epinephrine	7 (8.9)	51 (9.4)	84 (7.5)	81 (6.4)	57 (4.3)
Parenteral nutrition	47 (59.5)	422 (77.9)	1023 (91.4)	1210 (96.3)	1292 (97.1)
Bag-valve-mask	72 (91.1)	501 (92.4)	1013 (90.5)	1172 (93.2)	1213 (91.2)
HFV	28 (35.4)	295 (54.4)	638 (57.0)	560 (44.6)	442 (33.2)
CV	42 (53.2)	365 (67.3)	948 (84.7)	1117 (88.9)	1133 (85.2)
SMV	11 (13.9)	99 (18.3)	287 (25.6)	445 (35.4)	397 (29.8)
CPAP	20 (25.3)	227 (41.9)	720 (64.3)	998 (79.4)	1143 (85.9)

HFV=high-frequency ventilation; CV=conventional ventilation; SMV=synchronized intermittent mandatory ventilation; CPAP=continuous positive airway pressure

Table S2. In-hospital and Follow-up Outcomes by Gestational Age

	<u>22 Weeks</u>			<u>23 Weeks</u>		
	All infants n (%)	Actively treated n (%)	Not actively treated n (%)	All infants n (%)	Actively treated n (%)	Not actively treated n (%)
<i>In-hospital Outcome</i>	<i>N=357</i>	<i>N=79</i>	<i>N=278</i>	<i>N=755</i>	<i>N=542</i>	<i>N=213</i>
Death <12h	310 (86.8)	32 (40.5)	278 (100.0)	320 (42.4)	110 (20.3)	210 (98.6)
Death before discharge	338 (94.7)	60 (75.9)	278 (100.0)	554 (73.4)	341 (62.9)	213 (100.0)
No follow-up	1 (0.3)	1 (1.3)	0 (0.0)	23 (3)	23 (4.2)	0 (0.0)
<i>Outcome at 18-22 months' corrected age</i>	<i>N=356</i>	<i>N=78</i>	<i>N=0</i>	<i>N=732</i>	<i>N=519</i>	<i>N=0</i>
Survival	18 (5.1)	18 (23.1)		173 (23.6)	173 (33.3)	
Survival with severe NDI	6 (1.7)	6 (7.7)		42 (5.7)	42 (8.1)	
Survival without severe NDI	12 (3.4)	12 (15.4)		131 (17.9)	131 (25.2)	
Survival with moderate-severe NDI	11 (3.1)	11 (14.1)		90 (12.3)	90 (17.3)	
Survival without moderate-severe NDI	7 (2.0)	7 (9.0)		83 (11.3)	83 (16.0)	
<i>Outcome among survivors at follow-up</i>		<i>N=18</i>	<i>N=0</i>		<i>N=173</i>	<i>N=0</i>
Moderate NDI		5 (27.8)			48 (27.7)	
Moderate cerebral palsy		2 (11.1)			13 (7.5)	
Bayley-III cognition 70-84		5 (27.8)			30 (18.0)	
Bayley-III motor 70-84		1 (9.1)			32 (26.9)	
GMFCS Level 2 or 3		3 (16.7)			22 (12.7)	
Severe NDI		6 (33.3)			42 (24.3)	
Blindness (bilateral)		0 (0.0)			0 (0.0)	
Deafness (not correctable by amplification)		1 (5.6)			5 (2.9)	
Severe cerebral palsy		2 (11.1)			10 (5.8)	
Bayley-III cognition score <70		4 (22.2)			32 (19.2)	
Bayley-III motor score <70		3 (27.3)			24 (20.2)	
GMFCS Level 4 or 5		2 (11.1)			11 (6.4)	

Table S2, continued

	<u>24 Weeks</u>			<u>25 Weeks</u>		
	All infants n (%)	Actively treated n (%)	Not actively treated n (%)	All infants n (%)	Actively treated n (%)	Not actively treated n (%)
<i>In-hospital Outcome</i>	N=1152	N=1119	N=33	N=1262	N=1257	N=5
Death <12h	118 (10.2)	86 (7.7)	32 (97.0)	48 (3.8)	43 (3.4)	5 (100.0)
Death before discharge	477 (41.4)	444 (39.7)	33 (100.0)	311 (24.6)	306 (24.3)	5 (100.0)
No follow-up	62 (5.4)	62 (5.5)	0 (0.0)	82 (6.5)	82 (6.5)	0 (0.0)
<i>Outcome at 18-22 months' corrected age</i>	N=1090	N=1057	N=0	N=1180	N=1175	N=0
Survival	598 (54.9)	598 (56.6)		850 (72.0)	850 (72.3)	
Survival with severe NDI	111 (10.2)	111 (10.5)		129 (10.9)	129 (11.0)	
Survival without severe NDI	487 (44.7)	487 (46.1)		721 (61.1)	721 (61.3)	
Survival with moderate-severe NDI	271 (24.9)	271 (25.6)		327 (27.7)	327 (27.8)	
Survival without moderate-severe NDI	327 (30.0)	327 (30.9)		523 (44.3)	523 (44.5)	
<i>Outcome among survivors at follow-up</i>		N=598	N=0		N=850	N=0
Moderate NDI		160 (26.7)			198 (23.3)	
Moderate cerebral palsy		26 (4.4)			35 (4.1)	
Bayley-III cognition 70-84		127 (21.6)			175 (21.0)	
Bayley-III motor 70-84		84 (21.9)			100 (19.7)	
GMFCS Level 2 or 3		39 (6.5)			52 (6.1)	
Severe NDI		111 (18.5)			129 (15.2)	
Blindness (bilateral)		4 (0.7)			5 (0.6)	
Deafness (not correctable by amplification)		6 (1.0)			16 (1.9)	
Severe cerebral palsy		19 (3.2)			17 (2.0)	
Bayley-III cognition score <70		85 (14.5)			79 (9.5)	
Bayley-III motor score <70		73 (19.1)			74 (14.6)	
GMFCS Level 4 or 5		23 (3.9)			15 (1.8)	

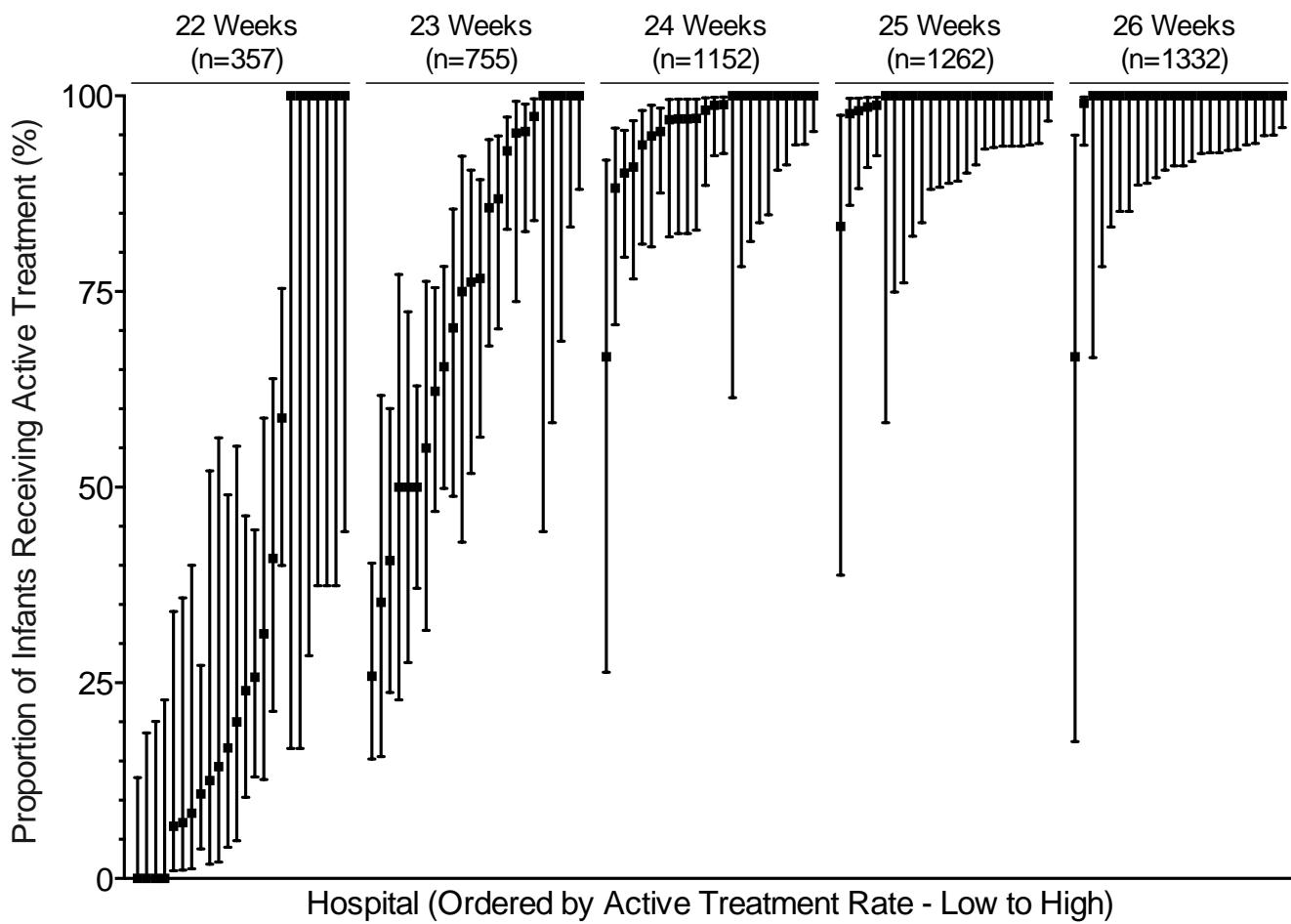
Table S2, continued

	<u>26 Weeks</u>		
	All infants n (%)	Actively treated n (%)	Not actively treated n (%)
<i>In-hospital Outcome</i>	N=1332	N=1330	N=2
Death <12h	32 (2.4)	30 (2.3)	2 (100.0)
Death before discharge	210 (15.8)	208 (15.6)	2 (100.0)
No follow-up	115 (8.6)	115 (8.6)	0 (0.0)
<i>Outcome at 18-22 months' corrected age</i>	N=1217	N=1215	N=0
Survival	991 (81.4)	991 (81.6)	
Survival with severe NDI	71 (5.8)	71 (5.8)	
Survival without severe NDI	920 (75.6)	920 (75.7)	
Survival with moderate-severe NDI	279 (22.9)	279 (23.0)	
Survival without moderate-severe NDI	712 (58.5)	712 (58.6)	
<i>Outcome among survivors at follow-up</i>		N=991	N=0
Moderate NDI		208 (21.0)	
Moderate cerebral palsy		14 (1.4)	
Bayley-III cognition 70-84		159 (16.5)	
Bayley-III motor 70-84		96 (15.9)	
GMFCS Level 2 or 3		26 (2.6)	
Severe NDI		71 (7.2)	
Blindness (bilateral)		1 (0.1)	
Deafness (not correctable by amplification)		10 (1.0)	
Severe cerebral palsy		17 (1.7)	
Bayley-III cognition score <70		45 (4.7)	
Bayley-III motor score <70		43 (7.1)	
GMFCS Level 4 or 5		14 (1.4)	

NDI=Neurodevelopmental impairment

GMFCS=Gross Motor Functional Classification System

Figure S1. Rates of Neonatal Active Treatment for Infants Born at 22 to 26 Weeks' Gestation in 24 Hospitals in the NICHD Neonatal Research Network



Point values represent the proportion of infants of the specified gestational age that were born at 1 of 24 hospitals in the NICHD Neonatal Research Network and received active treatment. Bars represent 95% confidence intervals. The x-axis represents hospital rank order by mean active treatment rate (ordered from lowest to highest).